

**Early season fungicide use for management of hazelnut kernel mold in Lewis, 2019.**

The objective of this trial was to determine if early spring applications of fungicide could result in less kernel mold at harvest. Treatments were arranged in a completely randomized block design in a commercial block of EFB infected Lewis hazelnuts located near Amity, OR. Each treatment consisted of 8 single-trees replicates. Fungicide treatments were applied using a Stihl SR 450 backpack mist blower such that 0.5 to 1 gal of a spray suspension was applied per tree. Treatments were applied on 8 Feb (50% bloom), 21 Feb (full bloom), 11 Mar (10% bud break), 21 Mar (full bud break), 2 Apr (1 leaf out), and 18 Apr (shoot elongation). The grower’s standard fungicide, herbicide, insecticide and fertility program was implemented during the course of this trial. Several fungicides were flown on during the 8-week period from bud break through shoot elongation to manage EFB. These fungicides included Ziram (6 lb/A) applied on 13 Mar, Flint Extra (3 fl oz/A) on 28 Mar and 10 Apr, and Stratego (12 fl oz/A) on 25 Apr, all applied at a rate of 10 gal solution/A. Nuts were allowed to fall naturally onto bare soil and collected just prior to first commercial harvest. Due to low nut production all nuts were collected from under each tree on 26 Sep and then stored in a greenhouse for a week. A total of 400 nuts were obtained from each of 3 non-treated and Miravis Prime treated trees. A total of 400 nuts were obtained from each of 2 Switch or Luna Tranquility treated trees while the 3<sup>rd</sup> replicate of 400 nut was a composite from 3 to 7 low yielding treated trees. A set of 200 nuts from each of three replicates was cracked open and evaluated for kernel defects on 3 Oct. Another set of 200 nuts from each of three replicates was incubated on wet orchard soil within moist chambers where nuts were always in contact with wet soil. Orchard soil was collected from the field and dried by allowing it to sit open in a greenhouse exposed to ambient temperature (60°F) and low humidity. This air-dried soil was placed into moist chambers and saturated by adding water until visibly saturated. Moist chambers were then carefully tipped onto their sides to pour off any excess water. After 2 weeks incubation at ambient room temperature, nuts were cracked open with a hammer and evaluated for kernel defects. Scoreable “mold” included any kernel with visible mycelial growth.

Rainfall for the growing season (Oct 2018 to Sep 2019) was below normal but temperatures were average. March precipitation was below normal while April and September were above normal. There was no significant difference in kernel mold among the various treatments. No phytotoxicity was observed in trees treated with any of the various materials used.

Treatment & Rate/100 gal	Mold (% kernels)**	
	Harvest (26 Sep)	After 2 weeks on wet soil - lab
Non-treated*.....	3.2	11.2
Switch at 14 oz/100 gal.....	3.0	14.7
Luna Tranquility at 27 fl oz/100 gal .....	3.9	11.6
Miravis Prime (A20560C) at 9.1 fl oz/100 gal....	3.0	14.7

\* Trees were sprayed Ziram (6 lb/A) on 13 Mar, Flint Extra (3 fl oz/A) on 28 Mar and 10 Apr, and Stratego (12 fl oz/A) on 25 Apr by the grower to manage EFB.

\*\* Means followed by the same letter do not differ significantly based on Fisher’s protected LSD ( $P=0.05$ ). Means without letters are not different.

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